



FAIRFAX COUNTY PARK AUTHORITY

12055 Government Center Parkway, Suite 927
Fairfax, VA 22035-1118



REQUEST FOR TECHNICAL SUBMITTALS FOR STANDARD ATHLETIC FIELD LIGHTING SYSTEM DESIGNS

June 8, 2006

Subject: Technical Review of Standard Athletic Field Lighting System Designs
Reference: Fairfax County Park Authority (FCPA) Athletic Field Lighting Study

To whom it may concern:

The FCPA is requesting that all interested vendors of sports lighting systems submit ten (10) standard athletic system designs satisfying the criteria and requirements specified in FCPA's new performance based specifications, which may be viewed and downloaded at:
<http://www.fairfaxcounty.gov/parks/fieldlighting.htm>.

System designs received and found to be in compliance with all performance specifications and submittal requirements may be listed as "approved" in the bid documents of a unit price competitive bid solicitation scheduled to be issued in August 2006 by the Fairfax County Department of Purchasing and Supply Management (DPSM).

The ten (10) standard designs indicated above are for the following five (5) field types in combination with two (2) off-field obtrusive light standards:

- Small Rectangular Field (180' x 360')
- Large Rectangular Field (210' x 360')
- Little League - U13 / Fast Pitch Diamond Field (200' x 200' x 200')
- Slow Pitch / Softball Diamond Field (300' x 300' x 300')
- Babe Ruth / Baseball Diamond Field (310' x 380' x 310')

Submission Requirements

Design submittals are requested to be made individually and separately for each of the ten (10) standard designs, made electronically in PDF format to FCPA-AFL.Submittals@swsgpc.com, and received within two weeks from the date of this Request for Technical Submittals.

Requirements for design submissions are provided in the attached document "Athletic Field Lighting Design Submission Requirements."

General information and requirements regarding requested submittals are provided in the attached document "General Information and Instructions." Field layout drawings are available in AUTOCAD format, upon request to the technical questions email address indicated below.

Technical Review

A consultant has been retained to review the lighting system designs and determine compliance with the FCPA's performance specifications.

Upon completion of the technical reviews, each participant will be advised of the results and of any comments on the designs. Participants whose design submittals do not meet FCPA requirements and specifications may be allowed an opportunity for resubmittal. Approved lighting system designs will receive an ID Code which will identify both the vendor and the specific system design. These technical review procedures are for informational purposes only and are not intended to affect the results of any future FCPA procurement process.

Questions

Your questions regarding this Request for Technical Submittals and associated technical and procedural requirements should be sent by email to the following addresses:

- Procedural questions to L.Hegyi@fairfaxcounty.gov
Attn: Les Hegyi, Project Manager
- Technical questions to FCPA-AFL.Inquiries@swsgpc.com
Attn: Abdullah Ayazi, Senior Electrical Engineer

The FCPA looks forward to receiving your timely responses and appreciates your continued interest in providing athletic field lighting systems for our projects.

Sincerely,

Lynn S. Tadlock
Director
Planning and Development Division

Request for Technical Submittals

June 8, 2006

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Attachments:

1. General Information and Instructions
2. Athletic Field Lighting Design Submission Requirements
3. FCPA Athletic Field Lighting Performance Specifications Outline dated June 7, 2006
4. Standard field layout drawings (5 pages) included in attachment 2. As noted above, AUTOCAD version of these drawings is available if requested by email.

cc: Dennis Bates, Senior Assistant County Attorney
John Lehman, Manager, Project Management Branch
Tim Scott, Supervisor, Project Management Branch
Les Hegyi, Project Manager, Project Management Branch

ATTACHMENTS



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GENERAL INFORMATION AND INSTRUCTIONS

to the

Request for Technical Submittals for Standard Athletic Field Lighting System Designs dated June 8, 2006

1. For Fairfax County Park Authority (FCPA) request for design submittals, see cover letter dated June 8, 2006.
2. Technical Criteria is provided in FCPA's "Athletic Field Lighting Performance Specifications Outline" dated June 7, 2006. It can be viewed and downloaded at <http://www.fairfaxcounty.gov/parks/fieldlighting.htm>.
3. The five (5) Standard field layout drawings are included as attachments in the performance specifications (item 2 above). These drawings are also available in AUTOCAD format, upon request to the technical questions email address FCPA-AFL.Inquiries@swsgpc.com; Attn: Abdullah Ayazi, Senior Electrical Engineer
4. Questions regarding technical submittals and associated requirements should be sent by email to the following addresses:

Procedural questions to LHegyi@fairfaxcounty.gov
Attn: Les Hegyi, Project Manager
Technical questions to FCPA-AFL.Inquiries@swsgpc.com
Attn: Abdullah Ayazi, Senior Electrical Engineer
5. Design submissions are requested to be made individually and separately for each of the ten (10) standard designs, made electronically in PDF format to FCPA-AFL.Submittals@swsgpc.com.
6. Design submittals are requested to be received electronically (see item 5 above) within two weeks from the date of receipt of this Request for Technical Submittals.



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ATHLETIC FIELD LIGHTING SYSTEMS DESIGN SUBMISSION REQUIREMENTS

Item No.	Item	Description	Mandatory Requirement
1	Letter and Certification	A cover letter listing all information being submitted must be included. Also list the name of the supplier's local representative and his/her telephone number.	Yes
2	On Field Lighting Design	Ten separate lighting design drawing(s), each showing: a. Field Name, date, file number, name of preparer, and other pertinent data for each of the typical field layouts. b. Lighting design drawings showing all the on-field initial and maintained-average horizontal illuminance levels, and associated uniformities ratios. c. All lighting designs shall be done at the grid spacing shown on the typical layouts. Measurements shall be taken at 3ft above grade. d. Outline of field(s) being lighted, as well as pole locations with reference to the center of the field (x & y). Pole locations are to be located as shown; no exceptions will be given. e. Lighting designs shall specify the number of fixtures on each pole, and their mounting heights as well as luminaire information, including wattage, initial lumens, optics, and luminaire aiming points for each of the five fields. f. Summary table showing the number of grid points; average, minimum and maximum illuminance levels in foot candles (fc); uniformity, including maximum to minimum ratio, coefficient of variance and uniformity gradient; number of luminaires, total kilowatts, average tilt factor; and light loss factor.	Yes
3	Off Field Lighting Design	Ten separate off-field spill-lighting design drawings, each showing initial and maintained vertical- illuminance levels on defined grid points for both the 150' and 200' property line as shown the layout drawings. The meter shall be oriented towards the center of the field at 50 ft above grade at 2nd base diamond fields or oriented 50ft towards the center of the rectangular fields at 50ft above grade (using TV camera calculation feature in computer design software).	Yes
4	Luminaire Aiming Diagram	Ten separate drawings, each showing luminaire aiming point on the field, and the poles on which the luminaires are mounted. Each aiming point shall identify the type of the luminaire.	Yes

Item No.	Item	Description	Mandatory Requirement
5	Photometric Reports	Provide photometric reports (in PDF) showing candlepower tabulations (as defined by IESNA-35-02) showing luminaire axial candlepower outputs at 5-degree increments (vertical and horizontal) for each NEMA beam type used. Glare analysis will be undertaken by the owners engineer using candlepower reports. Candlepower calculation shown in Figure 6 is for the manufactures reference.	Yes
6	Installation Brochures	Complete installation instructions with pictures and diagrams showing step-by-step installation.	Yes
7	Product Information	Complete set of product brochures defining materials and components, including a complete parts list and UL listings.	Yes

GENERAL NOTES:

1. Design submittals are requested within two weeks from the date of receipt of the 'Request for Technical Submittals' received via email.
2. Each system design is required to be submitted individually and separately.
3. Design submittals are requested to be made electronically, in PDF format sent to FCPA-AFL.Submittals@swsgpc.com.



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ATHLETIC FIELD LIGHTING SYSTEMS

Performance Specifications Outline

(Rev. 2)

June 7, 2006

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Athletic Field Lighting Systems Performance Specifications Outline

1.0 APPLICABILITY

These Specifications are applicable to and prescribe minimum performance requirements for the following types of athletic fields (see Figures 1 to 5):

1. Small Rectangular Field (Figure 1)..... 180' x 360'
2. Large Rectangular Field (Figure 2)..... 210' x 360'
3. Little League - U13 / Fast Pitch Diamond Field (Figure 3) 200' x 200' x 200'
4. Slow Pitch / Softball Diamond Field (Figure 4)..... 300' x 300' x 300'
5. Babe Ruth / Baseball Diamond Field (Figure 5)..... 310' x 380' x 310'

2.0 GENERAL DESIGN CRITERIA

- 2.1 Illuminating Engineering Society of North America(IESNA)
- 2.2 Fairfax County Zoning Ordinance (FCZO)
- 2.3 Virginia Uniform Statewide Building Code (VUSBC)
- 2.4 Class of Play Category (IESNA RP-6-01).....III
- 2.5 Lighting Environmental Zone Classification (IESNA RP-33-99)LEZ 2 and LEZ 3
- 2.6 Aimable system
- 2.7 Light Loss Factor (LLF).....0.70 ¹

3.0 ELECTRICAL REQUIREMENTS

- 3.1 Voltage480 Volt, 3 Phase
- 3.2 Lamp1,500 Watt metal halide
- 3.3 Luminaires (including spill and glare control devices) UL 1598-00
- 3.4 Electrical equipment enclosuresNEMA 3R

4.0 LIGHTING PERFORMANCE REQUIREMENTS

4.1 ON-FIELD • Rectangular Fields

1. Maximum permitted illuminance (FCZO) 50 foot-candles
2. Maintained average horizontal illuminance33 foot-candles ²
3. Uniformity Ratio not to exceed 3:1
4. Calculation and on-field measurement grid (see Figures 1 to 5)..... 15ft x 15ft

¹ Alternate Light Loss Factors will be considered. A Tilt Factor is required when applicable.

² Testing tolerance 10% included therefore field measured maintained average horizontal illuminance levels shall not be below 30fc.

ON-FIELD • Diamond Fields

1. Maximum permitted illuminance (FCZO) 60 foot-candles
2. Minimum maintained average horizontal illuminance (Infield)55 foot-candles³
3. Minimum maintained average horizontal illuminance (Outfield)33 foot-candles⁴
4. Uniformity Ratio not to exceed (Infield) 2:1
5. Uniformity Ratio not to exceed (Outfield)2.5:1
6. Calculation and on-field measurement grid (see Figures 1 to 5)..... 15ft x 15ft

4.2 OFF-FIELD • Standard V1

When a residential property line is 200 ft or less from a field perimeter line, foul line, or outfield fence line as applicable and indicated on Figures 1 to 5.

1. Maximum permitted initial vertical spill ⁵ 0.3 foot-candles
2. Maximum permitted initial glare 6,000 candelas

4.3 OFF-FIELD • Standard V2

When a residential property line is more than 200 ft from a field perimeter line, foul line, or outfield fence line as applicable and indicated on Figures 1 to 5.

1. Maximum permitted initial vertical spill ⁵ 0.8 foot-candles
2. Maximum permitted initial glare 12,000 candelas

5.0 REMOTE CONTROL SYSTEM REQUIREMENTS

- 5.1 A security code based, 24-hour, remote control system that enables Owner and/or authorized user to remotely turn the system on or off, control the field lighting schedule, and monitor the system, using telephone and web based or software driven computer.
- 5.2 The remote control system shall be protected against power outages and memory loss, shall reboot to real-time once power is restored, and execute any commands issued prior to the outage.
- 5.3 The remote control system shall monitor and provide reports of actual lighting system usage.
- 5.4 On-site equipment shall include manual on/off switches to allow for maintenance and manual operation.
- 5.5 System shall be capable of operating any given field from multiple computers via the Internet.

6.0 POLE AND FOUNDATION REQUIREMENTS

- 6.1 Pole Locations As shown on Figures 1 to 5
- 6.2 Pole Height (above finished grade) maximum 90 ft.
- 6.3 Pole Material ASTM A595, hot-dip galvanized steel
- 6.4 Design criteria Dead load and basic wind velocity of 90 mph plus gust factor
- 6.5 Foundations Reinforced concrete (designed by a Professional Engineer registered in Virginia)

³ Testing tolerance 10% included therefore field measured maintained average horizontal illuminance levels shall not be below 50fc.

⁴ Testing tolerance 10% included therefore field measured maintained average horizontal illuminance levels shall not be below 30fc.

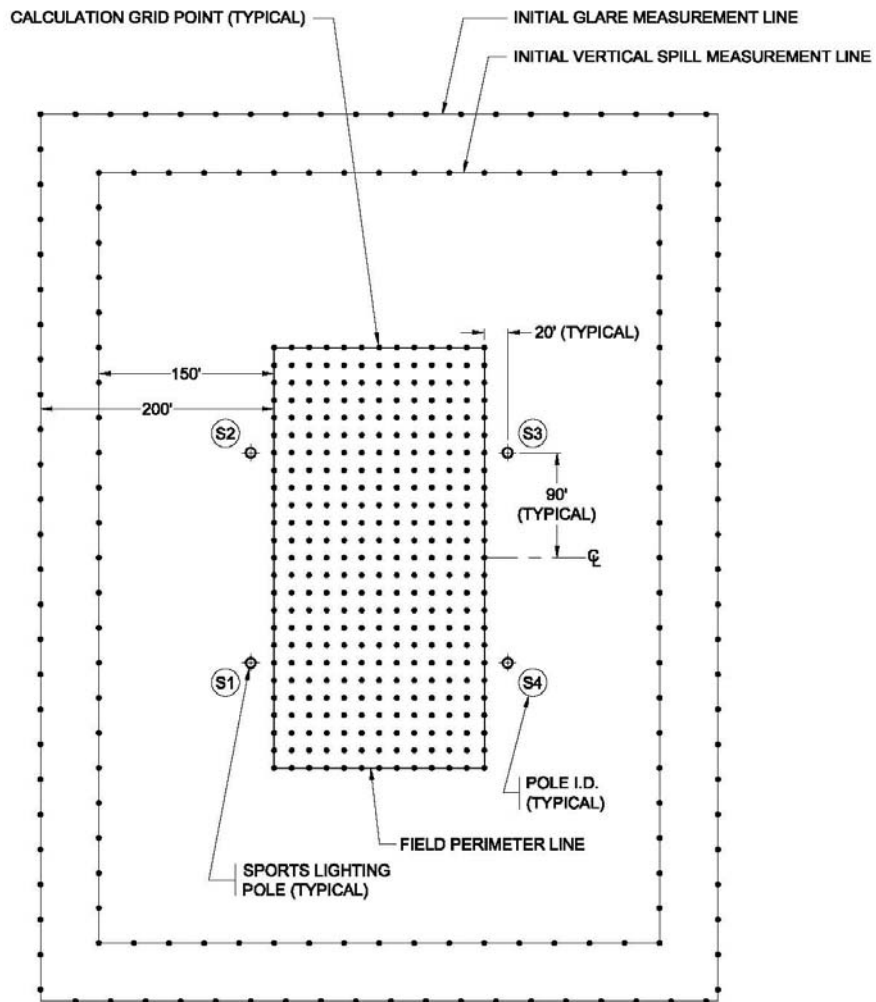
⁵ Spill light measurement grid points at 30 ft O/C as shown on Figures 1 to 5. Measurements shall be in the vertical plane at 5ft above grade, with the meter oriented towards a point at the center of the field 50 ft above grade.

7.0 WARRANTY AND MAINTENANCE REQUIREMENTS

- 7.1 The lighting system manufacturer shall provide all materials and labor to ensure all lighting system components, excluding lamps, remain in good operating condition for a 10 year Warranty Period.
- 7.2 The lighting system manufacturer shall provide all materials and labor to ensure the lighting system performs as designed, throughout the Maintenance Period of 7,500 service hours or 15 years, whichever occurs first. During the Maintenance Period the manufacturer shall:
 1. Maintain lighting levels within $\pm 10\%$ of the maintained horizontal average illuminance level for the entire field.
 2. Group-replace all lamps when they reach the end of their service life as specified by the lamp manufacturer.
 3. Spot-replace individual lamps when 10% of the lamps are extinguished on the entire athletic field or more than one lamp is extinguished on any one pole.
- 7.3 All repairs shall be made within 2 weeks of notification.

(End)

ATTACHMENTS

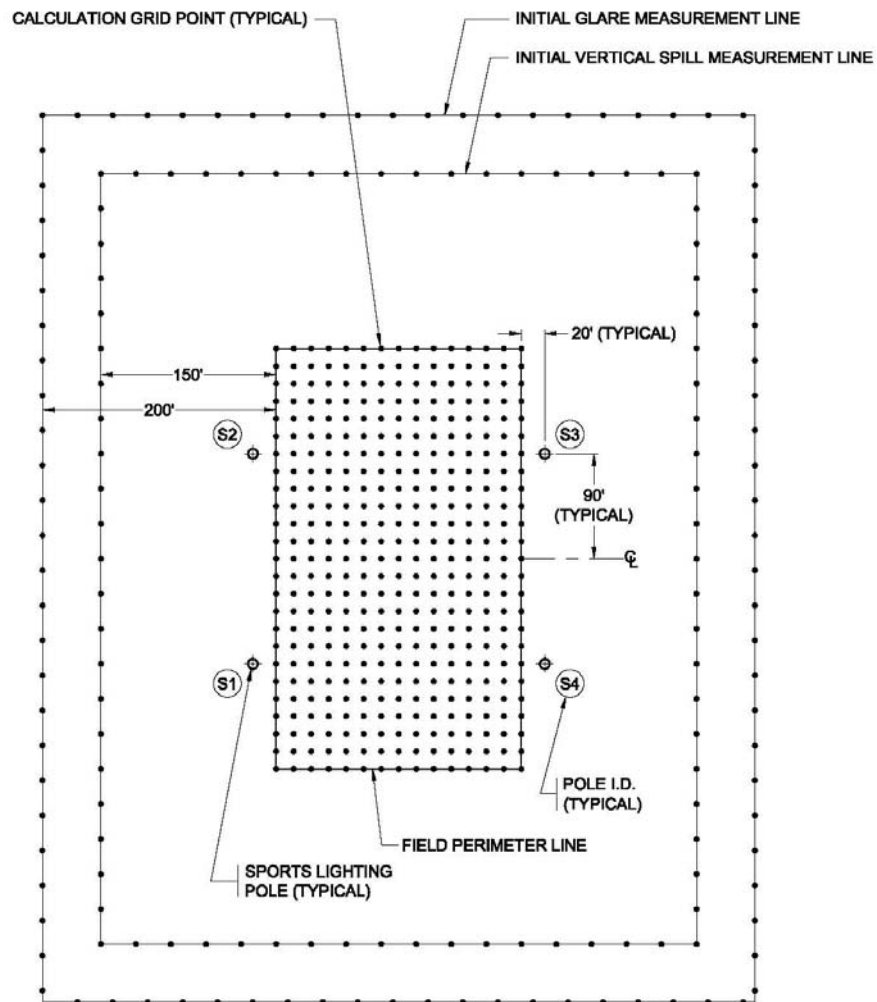
FIGURE 1 (REV A)

NOTE:
POLE LOCATIONS, GRID LAYOUTS, MEASUREMENT LINES, FIELD
SIZE AND POLE NUMBERING MUST BE AS PER LAYOUT ABOVE.

SMALL RECTANGULAR FIELD LAYOUT DRAWING

(180'W x 360'H)

0 50ft 100ft

FIGURE 2 (REV A)

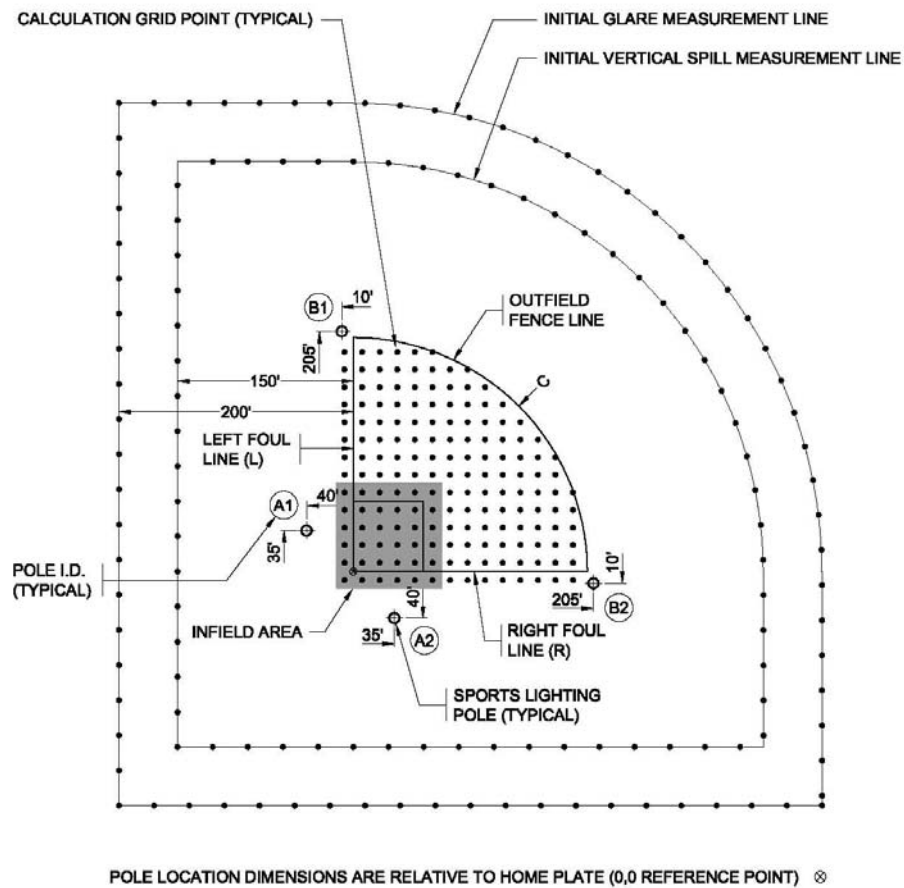
NOTE:
POLE LOCATIONS, GRID LAYOUTS, MEASUREMENT LINES, FIELD
SIZE AND POLE NUMBERING MUST BE AS PER LAYOUT ABOVE.

LARGE RECTANGULAR FIELD LAYOUT DRAWING

(210'W x 360'H)

0 50ft 100ft

FIGURE 3 (REV A)



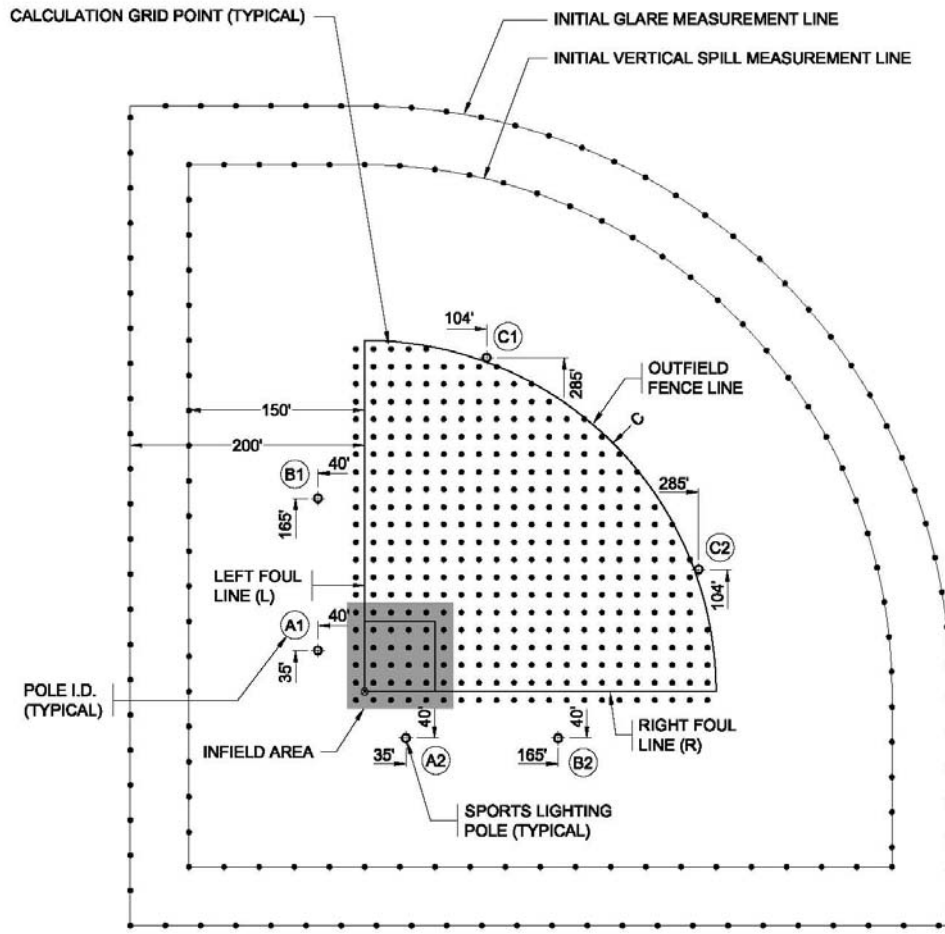
NOTE:
POLE LOCATIONS, GRID LAYOUTS, MEASUREMENT LINES, FIELD
SIZE AND POLE NUMBERING MUST BE AS PER LAYOUT ABOVE.

LITTLE LEAGUE - U13 / FAST PITCH DIAMOND FIELD LAYOUT DRAWING

(L=200', C=200', R=200')

0 50ft 100ft

FIGURE 4 (REV A)



POLE LOCATION DIMENSIONS ARE RELATIVE TO HOME PLATE (0,0 REFERENCE POINT) ⊗

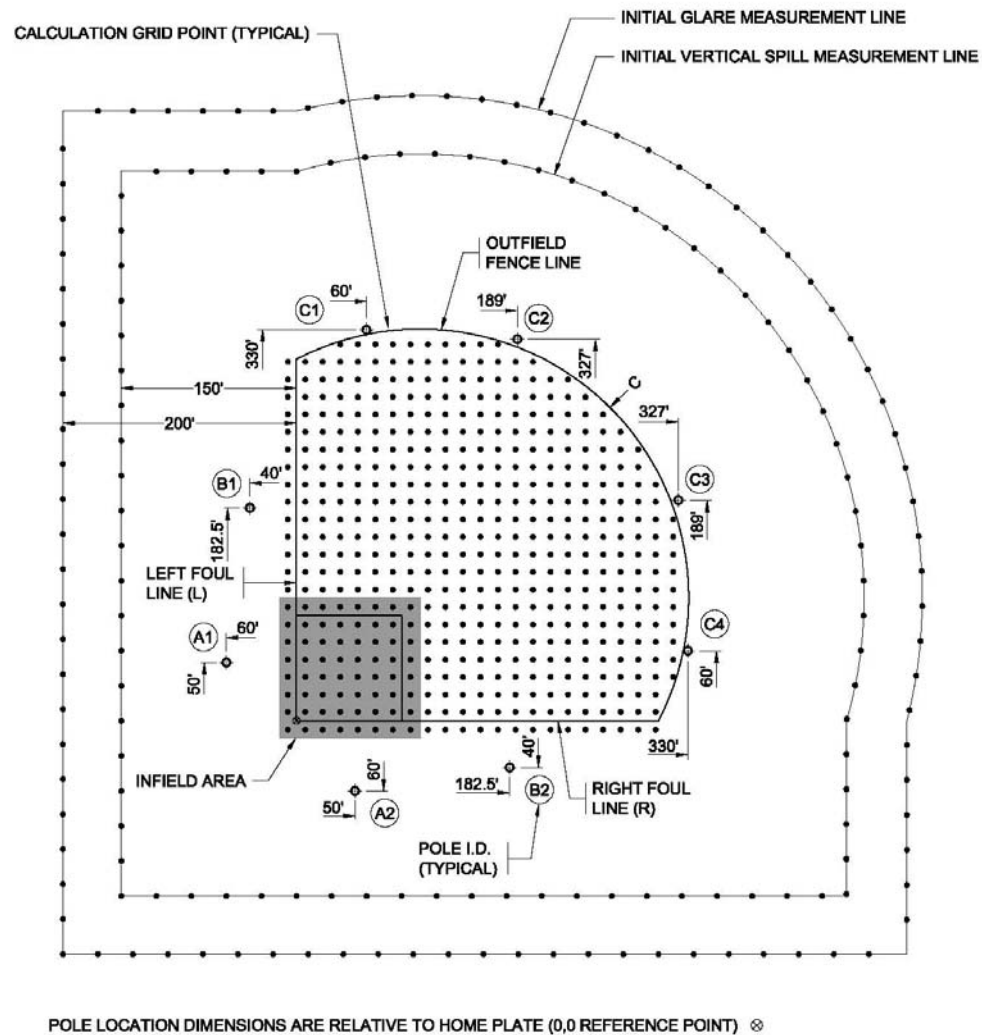
NOTE:
POLE LOCATIONS, GRID LAYOUTS, MEASUREMENT LINES, FIELD
SIZE AND POLE NUMBERING MUST BE AS PER LAYOUT ABOVE.

SLOW PITCH / SOFTBALL DIAMOND FIELD LAYOUT DRAWING

(L=300', C=300', R=300')

0 50ft 100ft

FIGURE 5 (REV A)

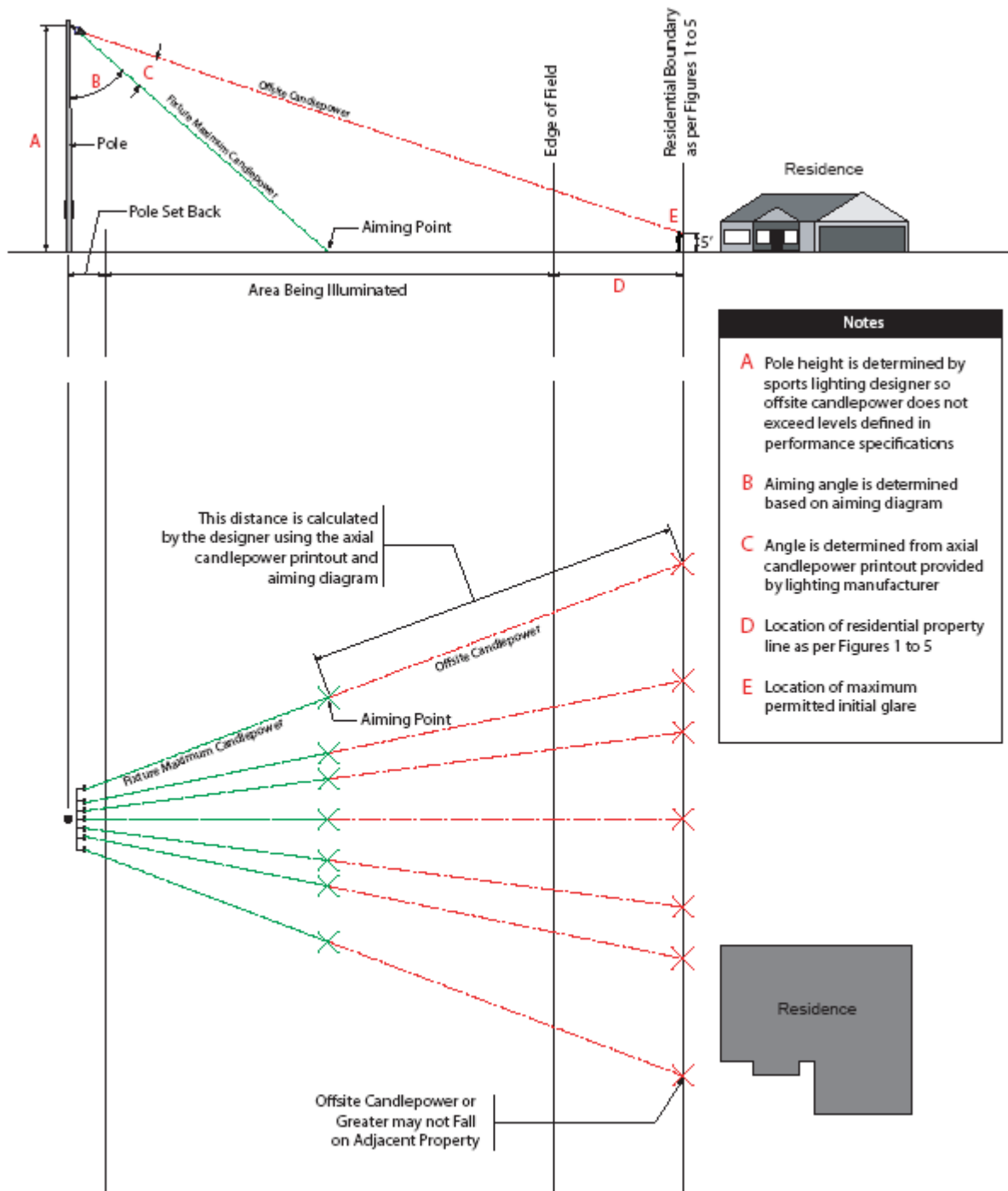


NOTE:
POLE LOCATIONS, GRID LAYOUTS, MEASUREMENT LINES, FIELD
SIZE AND POLE NUMBERING MUST BE AS PER LAYOUT ABOVE.

BABE RUTH / BASEBALL DIAMOND FIELD LAYOUT DRAWING

(L=310', C=380', R=310')



FIGURE 6

Glare Analysis